Inspection Report For Well: UT20736 - 07125

U.S. Environmental Protection Agency
Underground Injection Control Program, 8ENF-T
999 18th Street, Suite 300, Denver, CO 80202-2466

This form was printed on 9/24/2013

INSPECTOR(S): Lead: Roberts, Sarah — Date: ~~10~~ 12/10/2013

Others: Ajayi, Christopher — Time: 1:21 am / pm

OPERATOR (only if different): _____

REPRESENTATIVE(S): Chad Stevenson

PRE-INSPECTION REVIEW

Petroglyph Operating Company, Inc

Well Name:	Ute Tribal 29-11
Well Type:	Enhanced Recovery (2R)
Operating Status:	AC (ACTIVE) as of 4/24/2007
Oil Field:	Antelope Creek (Duchesne)
Location:	NESW S29 T5S R3W
Indian Country:	X, Uintah and Ouray

Last Inspection:	8/28/2012	***Allowable Inj Pressure:***	1540 /
Last MIT:	Pass 3/31/2012	***Annulus Pressure From Last MIT:***	1030

BLACK = POSSIBLE VIOLATION GREY = DATA MISSING

INSPECTION TYPE: (Select One)

- ☐ Construction / Workover
- ☐ Plugging
- ☐ Post-Closure
- ☐ Response to Complaint
- ☒ Routine
- ☐ Witness MIT
- ☐ Other

ICIS Entered
Date 12/27/13
Initials JB

OBSERVED VALUES:

Tubing Gauge:	☒ Yes ☐ No	Pressure: U: 556 / L: _____ psig Gauge Range: Scada psig		Gauge Owner:	☐ EPA ☐ Operator
Annulus Gauge:	☒ Yes ☐ No	Pressure: 0 psig Gauge Range: opened psig		Gauge Owner:	☐ EPA ☐ Operator
Bradenhead Gauge:	☐ Yes ☐ No	Pressure: _____ psig Gauge Range: _____ psig		Gauge Owner:	☐ EPA ☐ Operator
Pump Gauge:	☐ Yes ☐ No	Pressure: _____ psig Gauge Range: _____ psig		Gauge Owner:	☐ EPA ☐ Operator
Operating Status: (Select One)	☐ Active ☐ Being Reworked	☒ Not Injecting ☐ Production	☐ Plugged and Abandoned ☐ Under Construction		

TAB	GREEN	BLUE	CBI
		1	

See page 2 for photos, comments, and site conditions.

U2 Entered
Date 12/17/13
Initial JB

Inspection Report For Well: UT20736 - 07125 (PAGE 2)

PHOTOGRAPHS: ☐ Yes ☒ No List of photos taken: _____

Comments and site conditions observed during inspection: _____

GPS: GPS File ID: _____

Signature of EPA Inspector(s): _____ _____

☐ Data Entry ☐ Compliance Staff ☐ Hard Copy Filing

NOTICE OF INSPECTION

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VIII, 999 18TH STREET - SUITE 500
DENVER, COLORADO 80202-2405

Date: 12/16/13
Hour: 8:00a

Notice of inspection is hereby given according to Section 1445(b) of the Safe Drinking Water Act (42 U.S.C. §300f et seq.).

Firm Name: Petroglyph Operating Inc

Firm Address: Roosevelt, UT, Antelope Creek Oil Field

REASON FOR INSPECTION:

For the purpose of inspecting records, files, papers, processes, controls and facilities, and obtaining samples to determine whether the person subject to an applicable underground injection control program has acted or is acting in compliance with the Safe Drinking Water Act and any applicable condition of permit or rule authorization.

SECTION 1445(b) of the SAFE DRINKING WATER ACT is quoted below:

Section 1445(b)(1): Except as provided in Paragraph (2), the Administrator, or representatives of the Administrator duly designated by him, upon presenting appropriate credentials, and a written notice to any supplier of water or other person subject to (a), or person subject (A) a national primary drinking water regulation prescribed under Section 1412(B) an applicable Underground Injection Control Program, or (C) any requirement to monitor an unregulated contaminant pursuant to subsection (a), or person in charge of any of the property of such supplier or other person referred to in clause (A), (B), or (C), is authorized to enter any establishment, ... facility, or other property of such supplier or other person in order to determine whether such supplier or other person has acted or is acting in compliance with this title, including for this purpose, inspection, at reasonable times, of records, files, papers, processes, controls, and facilities, or in order to test any feature of a public water system, including its raw water source. The Administrator or the Comptroller General (or any representative designated by either) shall have access for the purpose of audit and examination to any records, reports, or information of a grantee which are required to be maintained under subsection (a) or which are pertinent to any financial assistance under this title.

Sarah Roberts
Inspector's Name & Title (Print)

Inspector's Signature

EPA R8 3560-1 (8-89)

Original - Regional Office Copy
Yellow Copy - Operator Copy

OMB No. 2040-0042 Approval Expires 11/30/2014

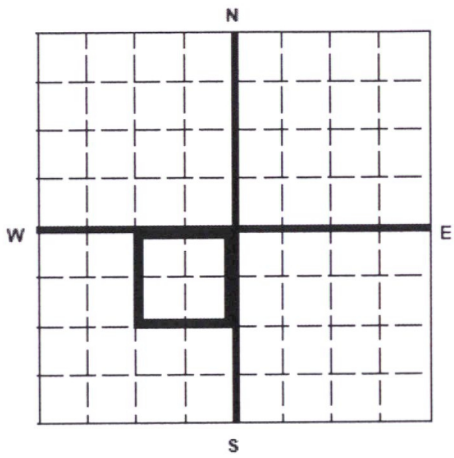
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-07125

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 29 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2010 ft. frm (N/S) S Line of quarter section
and 1888 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [X] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [X] Area

Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 29-11

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	16	1447	1471	673		0	0
February	16	1488	1500	749		0	0
March	16	1497	1497	817		0	0
April	16	1449	1479	758		0	0
May	16	1444	1479	763		0	0
June	16	1447	1481	715		0	0
July	16	1440	1463	728		0	0
August	16	1437	1479	677		0	0
September	16	1443	1484	683		0	0
October	16	1486	1503	809		0	0
November	16	1457	1485	739		0	0
December	16	1485	1496	811		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		03/21/2017

EPA Form 7520-11 (Rev. 12-11)

GREEN BLUE CBI TAB 2

UIC Entered
Date 4/6/17
Initial JB

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 29-11 INJ, DUCHESNE**	Lab Tech:	**Kaitlyn Natelli**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2017**		
Sample ID:	**WA-345355**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	**1/25/2017**
System Temperature 1 (°F):	**300**
System Pressure 1 (psig):	**2000**
System Temperature 2 (°F):	**130**
System Pressure 2 (psig):	**50**
Calculated Density (g/ml):	**1.0045**
pH:	**9.40**
Calculated TDS (mg/L):	**10219.45**
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	**0.00**
H_2S in Gas (%):	
H2S in Water (mg/L):	**0.00**
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	**0.00**
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	**3063.41**	Chloride (Cl):	**4500.00**
Potassium (K):	**26.55**	Sulfate (SO_4):	**70.00**
Magnesium (Mg):	**10.13**	Bicarbonate (HCO_3):	**1830.00**
Calcium (Ca):	**25.81**	Carbonate (CO_3):	
Strontium (Sr):	**6.10**	Hydroxide(HO):	
Barium (Ba):	**10.73**	Acetic Acid (CH_3COO)	
Iron (Fe):	**413.14**	Propionic Acid (C_2H_5COO)	
Zinc (Zn):	**235.47**	Butanoic Acid (C_3H_7COO)	
Lead (Pb):	**0.30**	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Ammonia NH_3:		Fluoride (F):	
Manganese (Mn):	**0.79**	Bromine (Br):	
Aluminum (Al):	**0.53**	Silica (SiO_2):	**27.02**
Lithium (Li):	**3.08**	Calcium Carbonate ($CaCO_3$):	
Boron (B):	**5.61**	Phosphates (PO_4):	**14.56**
Silicon (Si):	**12.63**	Oxygen (O_2):	

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	2.01	22.35	1.13	5.87	0.00	0.00	5.08	300.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
149.00	267.00	2.06	22.38	1.03	5.74	0.00	0.00	5.17	300.39	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
168.00	483.00	2.12	22.41	0.96	5.62	0.00	0.00	5.25	300.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
187.00	700.00	2.19	22.43	0.90	5.51	0.00	0.00	5.32	300.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
206.00	917.00	2.27	22.46	0.86	5.42	0.00	0.00	5.39	300.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
224.00	1133.00	2.35	22.48	0.83	5.36	0.00	0.00	5.46	300.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
243.00	1350.00	2.43	22.50	0.82	5.32	0.00	0.00	5.51	300.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
262.00	1567.00	2.52	22.52	0.81	5.31	0.00	0.00	5.56	300.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
281.00	1783.00	2.62	22.53	0.82	5.32	0.00	0.00	5.60	300.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2000.00	2.71	22.54	0.83	5.35	0.00	0.00	5.64	300.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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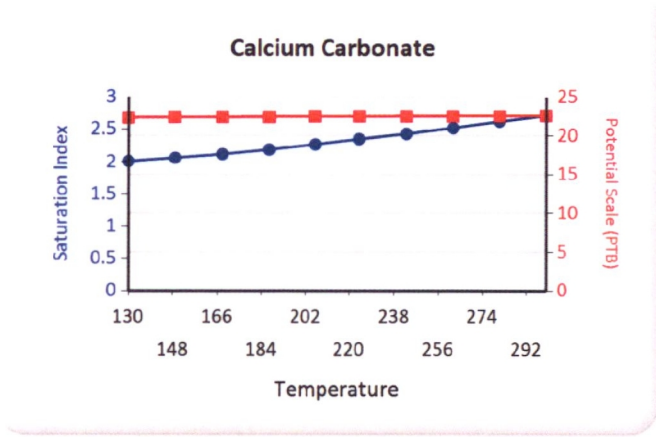
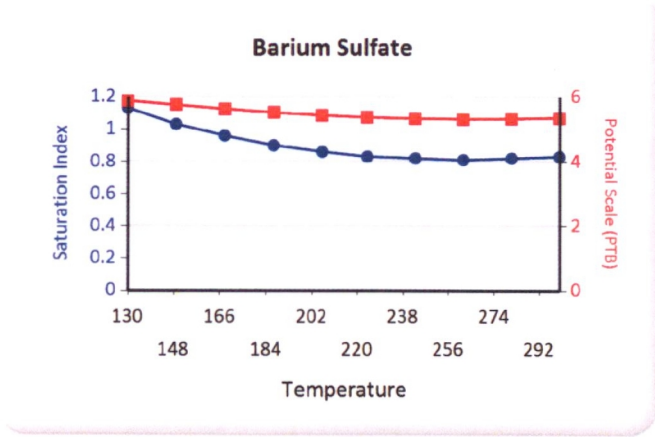
Water Analysis Report

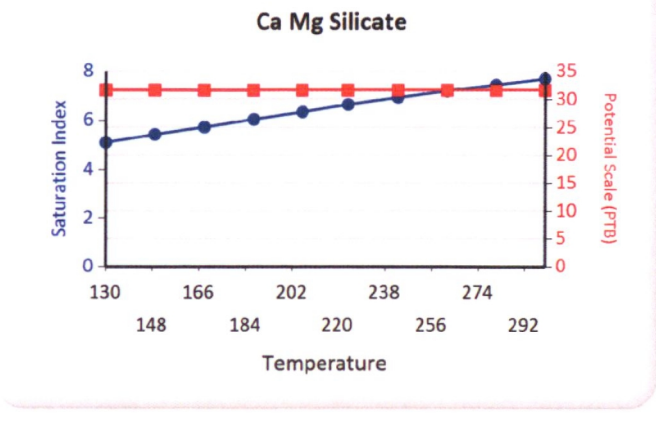
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
130.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	4.71	158.31	0.00	0.00	8.50	20.21	5.10	31.61	20.57	62.68
149.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	4.91	158.31	0.00	0.00	9.13	20.22	5.42	31.63	20.92	62.68
168.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	5.09	158.31	0.00	0.00	9.75	20.23	5.73	31.63	21.28	62.68
187.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	5.25	158.32	0.00	0.00	10.35	20.23	6.05	31.63	21.64	62.68
206.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	5.39	158.32	0.00	0.00	10.93	20.24	6.35	31.63	22.00	62.68
224.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	5.51	158.32	0.00	0.00	11.48	20.24	6.65	31.63	22.34	62.68
243.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	5.61	158.32	0.00	0.00	12.01	20.24	6.94	31.63	22.67	62.68
262.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	5.70	158.32	0.00	0.00	12.51	20.24	7.21	31.63	22.99	62.68
281.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	5.77	158.32	0.00	0.00	12.97	20.24	7.46	31.63	23.28	62.68
300.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	5.82	158.32	0.00	0.00	13.40	20.24	7.70	31.63	23.55	62.68

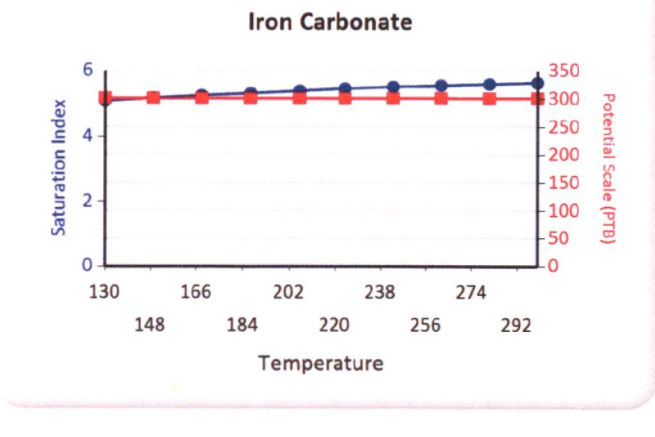
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate Zinc Carbonate Mg Silicate Ca Mg Silicate Fe Silicate









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Vernal, UT 84078

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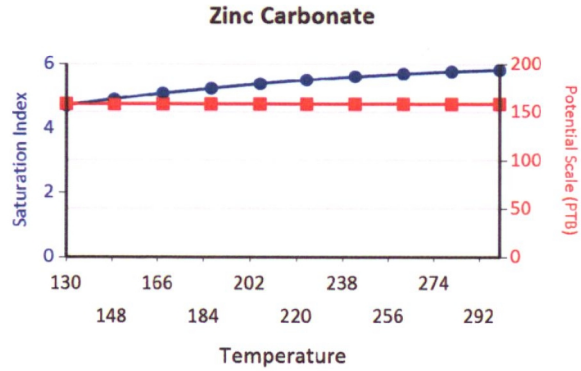
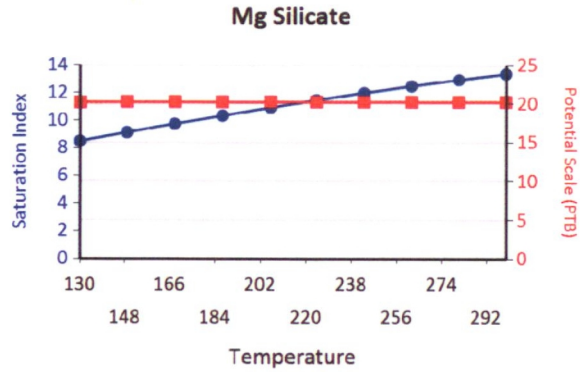
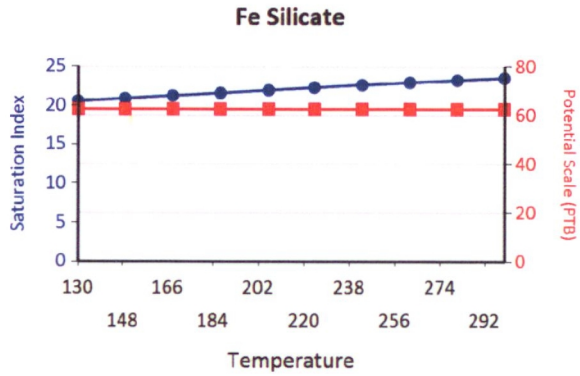






June 1, 2017

Gary Wang or Don Breffle
Underground Injection Control Enforcement
U.S. Environmental Protection Agency
Mail Code: 8ENF-UFO
US EPA Region 8
1595 Wyncoop Street
Denver, CO 80202-1129

RE: 5-year Mechanical Integrity Tests

Mr. Wang/ Mr. Breffle:

Please find enclosed 5-year Mechanical Integrity Tests for the following wells:

- Ute Tribal 04-01
- Ute Tribal 08-06
- Ute Tribal 16-16
- Ute Tribal 18-14
- Ute Tribal 28-11
- Ute Tribal 29-02
- Ute Tribal 29-08A
- Ute Tribal 29-10
- Ute Tribal 29-11 UT20736-07125
- Ute Tribal 29-15
- Ute Tribal 30-16
- Ute Tribal 33-16D3

U2 Entered
Date 6/14/17
Initial JB

Best Regards,

Nicole Colby
Manager, Land & Regulatory Compliance

TAB	GREEN	BLUE	CBI
		2	

Mechanical Integrity Test
Tubing/Casing Annulus Pressure Test

U.S. Environmental Protection Agency
Underground Injection Control Program
1595 Wynkoop Street, Denver, CO 80202

EPA Witness: ____________________ Date: 4 / 3 / 17
Test conducted by: CHAD STEVENSON
Others present: ____________________

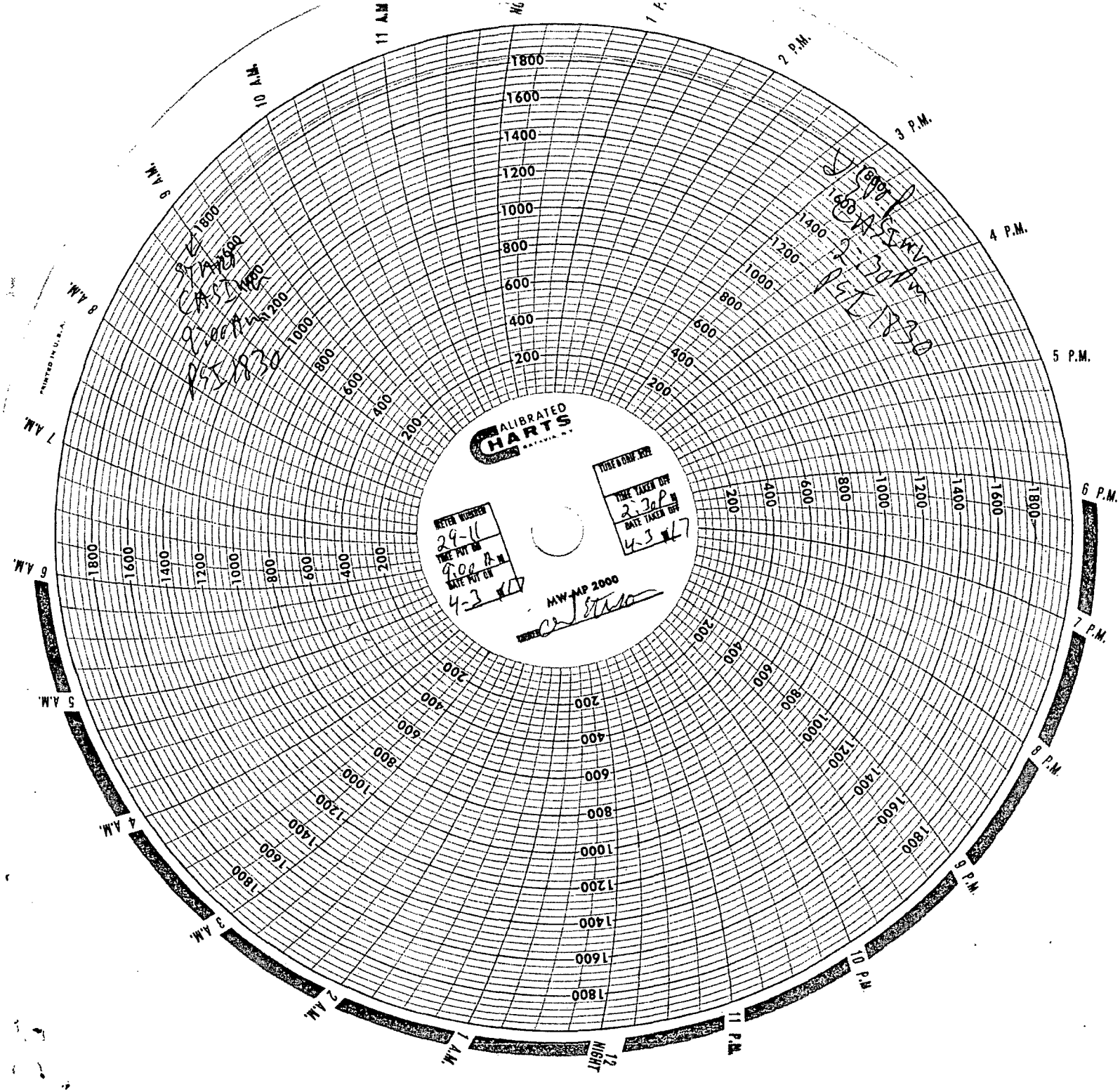
Well Name: 29-11	Type: ER SWD	**Status:** AC TA UC
Field: ANTELOPE CREEK		
Location: 29-11 Sec:____ T____ N / S R____ E / W	County: DUCHESNE	State: UT
Operator: PETROGLYPH ENERGY		
Last MIT: / /	**Maximum Allowable Pressure:** ______ PSIG	

Regularly scheduled test? [X] Yes [ ] No
Initial test for permit? [ ] Yes [ ] No
Test after well rework? [ ] Yes [ ] No

Well injecting during test? If Yes, rate: 26 **bpd**
Pre-test annulus pressure: 26 **psig**

MIT DATA TABLE	***Test #1***	***Test #2***	***Test #3***
TUBING		***PRESSURE RECORD***	
Initial Pressure	1459 psig	psig	psig
End of test pressure	1459 psig	psig	psig
CASING / TUBING ANNULUS		***PRESSURE RECORD***	
0 minutes	1830 psig	psig	psig
5 minutes	1830 psig	psig	psig
10 minutes	1830 psig	psig	psig
15 minutes	1830 psig	psig	psig
20 minutes	1830 psig	psig	psig
25 minutes	1830 psig	psig	psig
30 minutes	1830 psig	psig	psig
5 HOURS ~~minutes~~	1830 psig	psig	psig
____ **minutes**	psig	psig	psig
RESULT	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail	[ ] Pass [ ] Fail

Does the annulus pressure build back up after the test ? If Yes, ________ psig.


CALIBRATED CHARTS
METER NUMBER
29-11
TIME PUT ON
9:00 A.M.
DATE PUT ON
4-2 W7
TIME TAKEN OFF
2:30 P.M.
DATE TAKEN OFF
4-3 W7
MW-MP 2000
PRINTED IN U.S.A.
NOON
1 P.M.
2 P.M.
3 P.M.
4 P.M.
5 P.M.
6 P.M.
7 P.M.
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MIDNIGHT
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200
400
600
800
1000
1200
1400
1600
1800

OMB No. 2040-0042 Approval Expires 11/30/2014

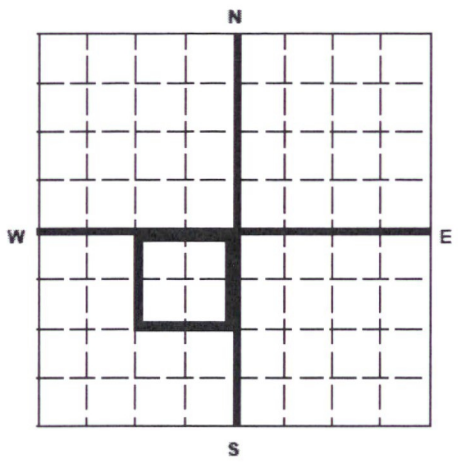
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah, 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-~~04434~~ 07125

Surface Location Description
___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 29 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2010 ft. frm (N/S) S Line of quarter section and 1888 ft. from (E/W) W Line of quarter section.

U2 Entered
Date 3/3/16
Initial KD

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 29-11

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING – CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	15	1345	1457	793		0	0
February	15	1346	1507	968		0	0
March	15	1463	1499	1050		0	0
April	15	1454	1485	993		0	0
May	15	1487	1506	999		0	0
June	15	1459	1483	914		0	0
July	15	1402	1479	813		0	0
August	15	1451	1510	979		0	0
September	15	1485	1507	904		0	0
October	15	1490	1490	921		0	0
November	15	1385	1454	549		0	0
December	15	1409	1507	548		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibliity of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		02/08/2016

GREEN BLUE CBI TAB

EPA Form 7520-11 (Rev. 12-11)

Multi-Chem Analytical Laboratory
1553 East Highway 40
Vernal, UT 84078

multi-chem
A HALLIBURTON SERVICE

Units of Measurement: **Standard**

Water Analysis Report

Production Company:	**PETROGLYPH OPERATING CO INC - EBUS**	Sales Rep:	**James Patry**
Well Name:	**UTE TRIBAL 29-11 INJ, DUCHESNE**	Lab Tech:	**Michele Pike**
Sample Point:	**Well Head**		
Sample Date:	**1/6/2016**		
Sample ID:	**WA-327707**		

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics

Test Date:	1/13/2016
System Temperature 1 (°F):	60
System Pressure 1 (psig):	2000
System Temperature 2 (°F):	180
System Pressure 2 (psig):	50
Calculated Density (g/ml):	1.0065
pH:	8.50
Calculated TDS (mg/L):	13334.63
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	10.00
Tot. SuspendedSolids(mg/L):	
Corrosivity(LanglierSat.Indx)	0.00
Alkalinity:	

Analysis @ Properties in Sample Specifics

Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	4654.30	Chloride (Cl):	6000.00
Potassium (K):	41.35	Sulfate (SO_4):	280.00
Magnesium (Mg):	33.66	Bicarbonate (HCO_3):	2196.00
Calcium (Ca):	89.13	Carbonate (CO_3):	
Strontium (Sr):	6.67	Acetic Acid (CH_3COO)	
Barium (Ba):	2.52	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.58	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	1.29	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.38	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.20	Silica (SiO_2):	26.55
Aluminum (Al):	0.13	Calcium Carbonate ($CaCO_3$):	
Lithium (Li):	4.18	Phosphates (PO_4):	72.36
Boron (B):	27.33	Oxygen (O_2):	
Silicon (Si):	12.41		

Notes:

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	2.13	75.62	0.81	1.27	3.31	1.42	2.76	1.87	0.00	0.00	0.00	0.00	0.00	0.00	10.00	0.67
167.00	267.00	2.05	74.78	0.84	1.28	3.30	1.42	2.67	1.87	0.00	0.00	0.00	0.00	0.00	0.00	10.12	0.67
153.00	483.00	1.99	74.07	0.87	1.30	3.31	1.42	2.58	1.87	0.00	0.00	0.00	0.00	0.00	0.00	10.27	0.67
140.00	700.00	1.92	73.28	0.91	1.31	3.33	1.42	2.49	1.87	0.00	0.00	0.00	0.00	0.00	0.00	10.43	0.67
127.00	917.00	1.87	72.41	0.96	1.34	3.36	1.42	2.40	1.87	0.00	0.00	0.00	0.00	0.00	0.00	10.61	0.67
113.00	1133.00	1.81	71.48	1.03	1.36	3.41	1.42	2.31	1.87	0.00	0.00	0.00	0.00	0.00	0.00	10.80	0.67
100.00	1350.00	1.77	70.51	1.10	1.38	3.47	1.42	2.22	1.86	0.00	0.00	0.00	0.00	0.00	0.00	11.02	0.67
87.00	1567.00	1.72	69.53	1.20	1.41	3.55	1.42	2.13	1.86	0.00	0.00	0.00	0.00	0.00	0.00	11.25	0.67
73.00	1783.00	1.68	68.56	1.31	1.43	3.64	1.42	2.04	1.86	0.00	0.00	0.00	0.00	0.00	0.00	11.51	0.67
60.00	2000.00	1.65	67.64	1.43	1.44	3.76	1.42	1.96	1.85	0.00	0.00	0.00	0.00	0.00	0.00	11.78	0.67

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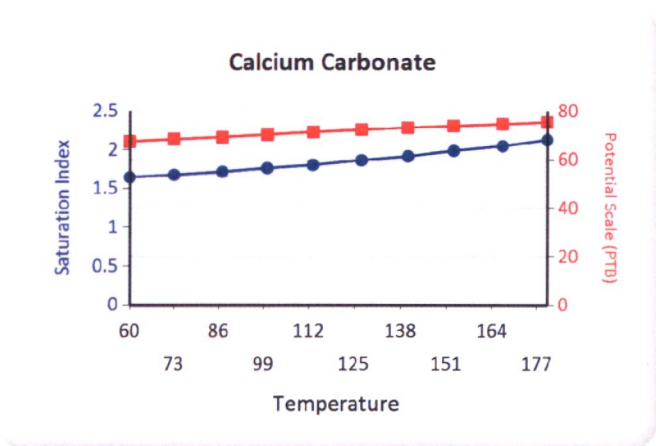
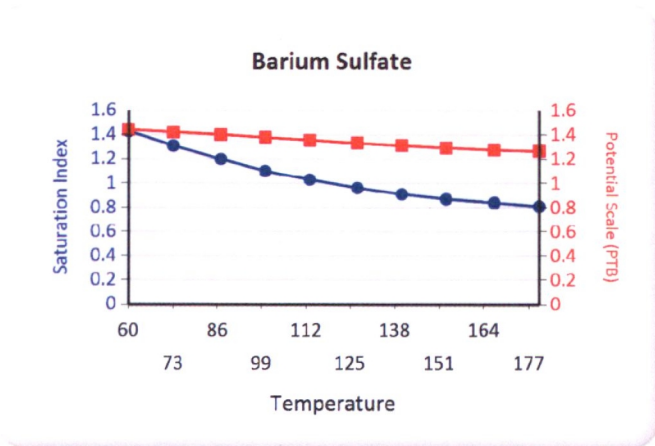
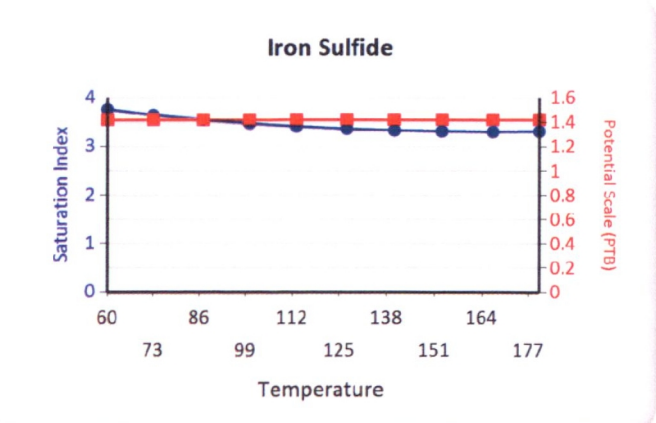
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
180.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	2.32	0.86	10.75	0.15	7.16	55.82	4.16	33.32	11.05	2.00
167.00	267.00	0.00	0.00	0.00	0.00	0.00	0.00	2.18	0.86	10.97	0.15	6.54	51.26	3.80	31.62	10.60	2.00
153.00	483.00	0.00	0.00	0.00	0.00	0.00	0.00	2.03	0.86	11.23	0.15	5.97	47.45	3.47	29.93	10.20	2.00
140.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.86	11.52	0.15	5.39	43.41	3.14	27.96	9.81	2.00
127.00	917.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	0.85	11.82	0.15	4.80	39.26	2.82	25.76	9.42	2.00
113.00	1133.00	0.00	0.00	0.00	0.00	0.00	0.00	1.53	0.84	12.15	0.15	4.22	35.05	2.49	23.41	9.04	2.00
100.00	1350.00	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.83	12.52	0.15	3.62	30.79	2.16	20.93	8.67	2.00
87.00	1567.00	0.00	0.00	0.00	0.00	0.00	0.00	1.15	0.81	12.91	0.15	3.03	26.46	1.84	18.35	8.30	2.00
73.00	1783.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.77	13.33	0.15	2.42	21.95	1.52	15.64	7.94	2.00
60.00	2000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.71	0.70	13.79	0.15	1.81	17.15	1.19	12.78	7.58	2.00

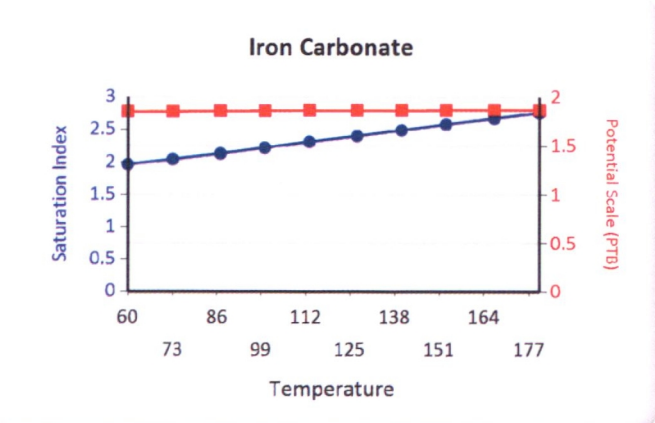
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









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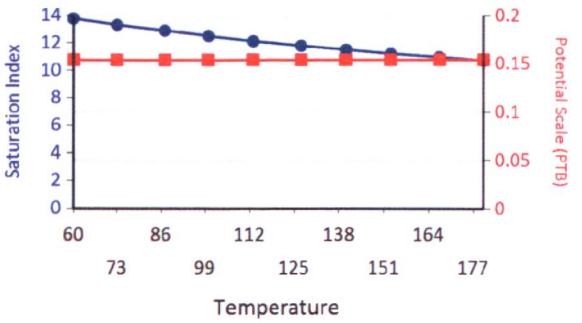
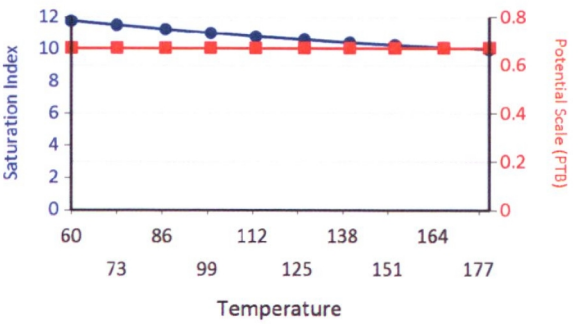
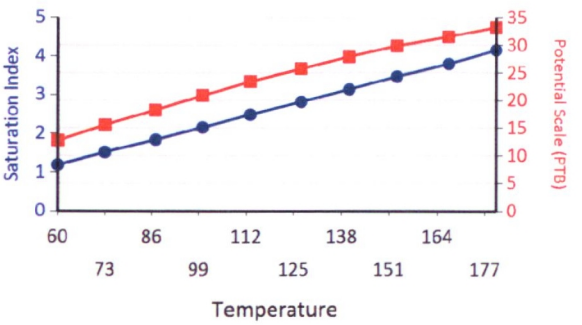
Lead Sulfide



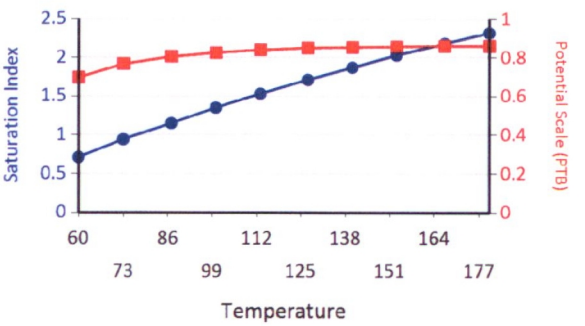
Zinc Sulfide



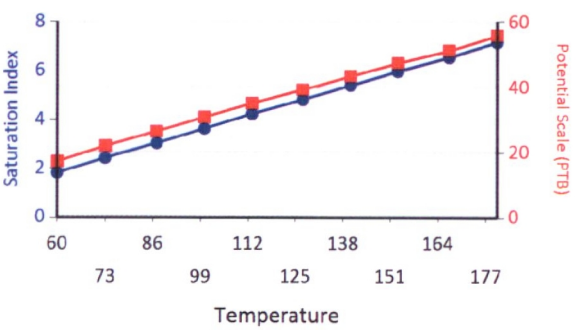
Ca Mg Silicate



Zinc Carbonate



Mg Silicate



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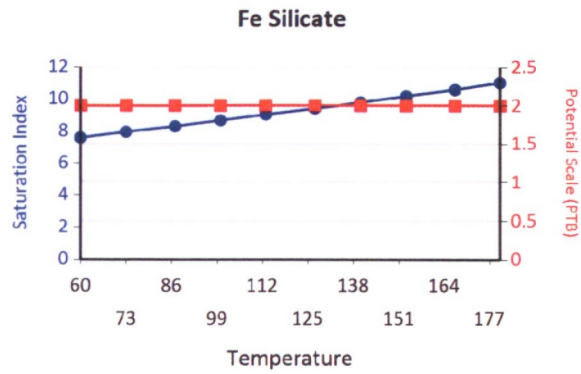
Water Analysis Report



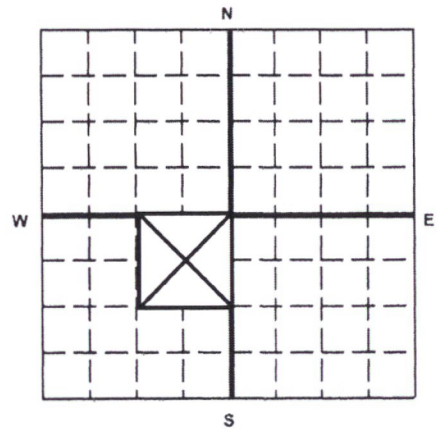
OMB No. 2040-0042 Approval Expires 12/31/2011

United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee	Name and Address of Surface Owner
Petroglyph Operating Company, Inc. 2258 P.O. Box 7608 Boise, Idaho 83709	Ute Indian Tribe P.O. Box 70 Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State	County	Permit Number
Utah	Duchesne	UT2736-07125

Surface Location Description

___ 1/4 of ___ 1/4 of NE 1/4 of SW 1/4 of Section 29 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 2010 ft. frm (N/S) S Line of quarter section and 1888 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY	TYPE OF PERMIT
[ ] Brine Disposal	[ ] Individual
[X] Enhanced Recovery	[X] Area
[ ] Hydrocarbon Storage	Number of Wells 111

Lease Name Ute Indian Tribe Well Number UTE TRIBAL 29-11

		INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH	YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January	14	1289	1450	1224		0	0
February	14	1482	1510	1126		0	0
March	14	1463	1507	239		0	0
April	14	1480	1502	1297		0	0
May	14	1449	1489	1219		0	0
June	14	1489	1499	1234		0	0
July	14	1453	1503	1227		0	0
August	14	1478	1497	1244		0	0
September	14	1409	1479	1082		0	0
October	14	1480	1485	1202		0	0
November	14	1488	1496	1134		0	0
December	14	1499	1505	1141		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor		2/10/2015

EPA Form 7520-11 (Rev. 12-08)

U2 Entered
Date 3/31/15
Initial GW

	GREEN	BLUE	CBI
TAB		2	

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH OPERATING CO INC - EBUS**
Well Name: **UTE TRIBAL 29-11 INJ, DUCHESNE**
Sample Point: **WELLHEAD**
Sample Date: **1/7/2015**
Sample ID: **WA-297526**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/14/2015
System Temperature 1 (°F):	160
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	80
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.0056
pH:	8.20
Calculated TDS (mg/L):	12715.44
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	35.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3452.67	Chloride (Cl):	6000.00
Potassium (K):	55.53	Sulfate (SO_4):	205.00
Magnesium (Mg):	11.09	Bicarbonate (HCO_3):	2928.00
Calcium (Ca):	22.15	Carbonate (CO_3):	
Strontium (Sr):	5.09	Acetic Acid (CH_3COO)	
Barium (Ba):	2.72	Propionic Acid (C_2H_5COO)	
Iron (Fe):	2.74	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	2.44	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.02	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.12	Silica (SiO_2):	27.87

Notes:
B=7.69 Al=.04 Li=1.55

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum $CaSO_4 \cdot 2H_2O$		Celestite $SrSO_4$		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	1.20	17.71	1.33	1.55	4.10	1.51	2.25	1.98	0.00	0.00	0.00	0.00	0.00	0.00	12.03	1.28
88.00	157.00	1.19	17.63	1.25	1.53	4.01	1.51	2.28	1.98	0.00	0.00	0.00	0.00	0.00	0.00	11.83	1.28
97.00	300.00	1.21	17.71	1.17	1.51	3.95	1.51	2.32	1.98	0.00	0.00	0.00	0.00	0.00	0.00	11.67	1.28
106.00	443.00	1.23	17.78	1.10	1.49	3.90	1.51	2.37	1.98	0.00	0.00	0.00	0.00	0.00	0.00	11.51	1.28
115.00	585.00	1.25	17.87	1.04	1.47	3.85	1.51	2.41	1.98	0.00	0.00	0.00	0.00	0.00	0.00	11.37	1.28
124.00	728.00	1.27	17.95	0.98	1.45	3.82	1.51	2.46	1.98	0.00	0.00	0.00	0.00	0.00	0.00	11.24	1.28
133.00	871.00	1.30	18.04	0.92	1.43	3.79	1.51	2.50	1.99	0.00	0.00	0.00	0.00	0.00	0.00	11.11	1.28
142.00	1014.00	1.32	18.12	0.87	1.40	3.77	1.51	2.54	1.99	0.00	0.00	0.00	0.00	0.00	0.00	10.99	1.28
151.00	1157.00	1.35	18.21	0.83	1.38	3.76	1.51	2.58	1.99	0.00	0.00	0.00	0.00	0.00	0.00	10.89	1.28
160.00	1300.00	1.38	18.30	0.79	1.36	3.75	1.51	2.63	1.99	0.00	0.00	0.00	0.00	0.00	0.00	10.78	1.28

		Hemihydrate $CaSO_4 \sim 0.5H_2O$		Anhydrate $CaSO_4$		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
80.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	1.56	12.21	0.01	0.00	0.00	0.00	0.00	6.75	2.12
88.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	1.58	11.90	0.01	0.00	0.00	0.00	0.00	6.80	2.12
97.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.56	1.59	11.63	0.01	0.12	1.08	0.00	0.00	7.02	2.12
106.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	1.67	1.61	11.38	0.01	0.51	3.57	0.00	0.00	7.25	2.12
115.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	1.78	1.61	11.14	0.01	0.91	5.95	0.03	0.66	7.49	2.12
124.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	1.89	1.62	10.92	0.01	1.31	8.21	0.25	2.37	7.73	2.12
133.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	1.99	1.62	10.70	0.01	1.71	10.32	0.48	4.05	7.99	2.13
142.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	2.09	1.63	10.50	0.01	2.12	12.26	0.70	5.68	8.26	2.13
151.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	2.19	1.63	10.31	0.01	2.52	14.02	0.93	7.23	8.53	2.13
160.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	2.28	1.63	10.14	0.01	2.93	15.58	1.16	8.70	8.81	2.13

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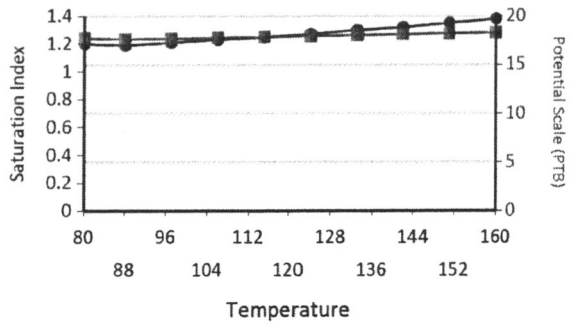
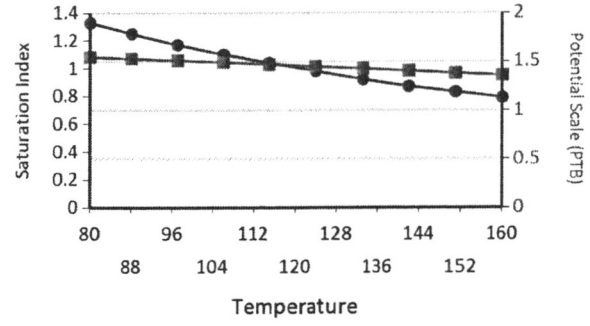
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate

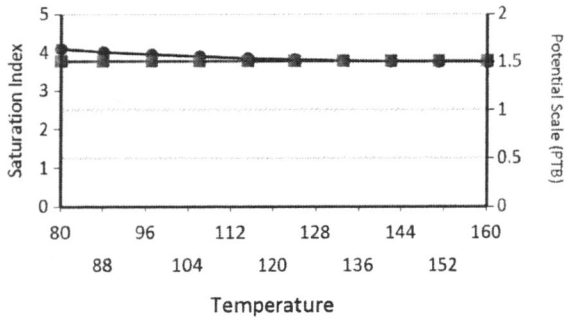
Calcium Carbonate



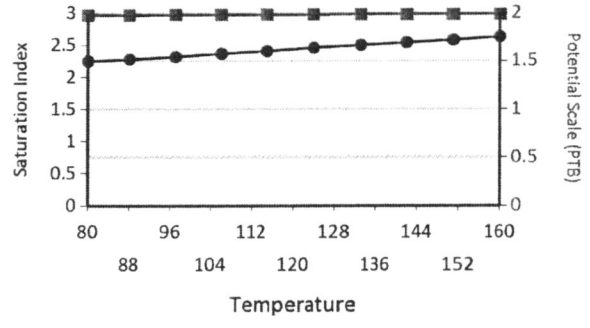
Barium Sulfate



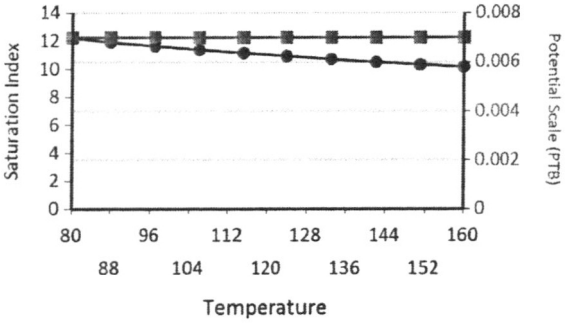
Iron Sulfide



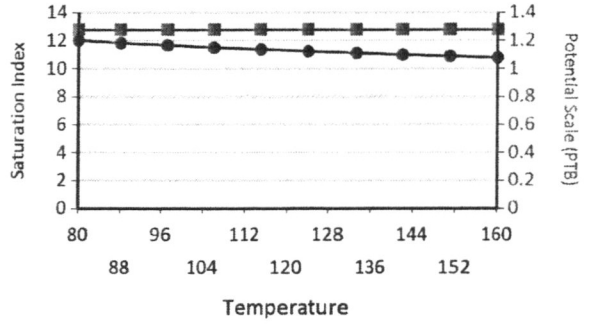
Iron Carbonate



Lead Sulfide



Zinc Sulfide



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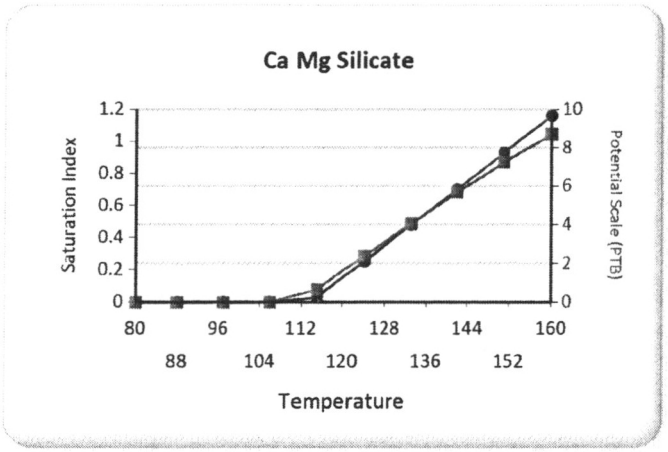
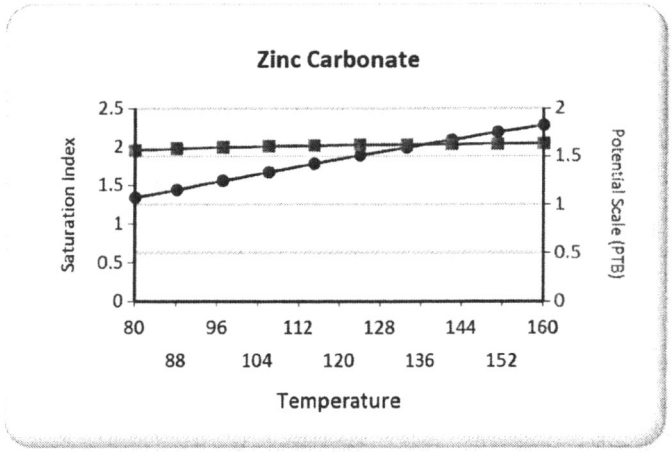
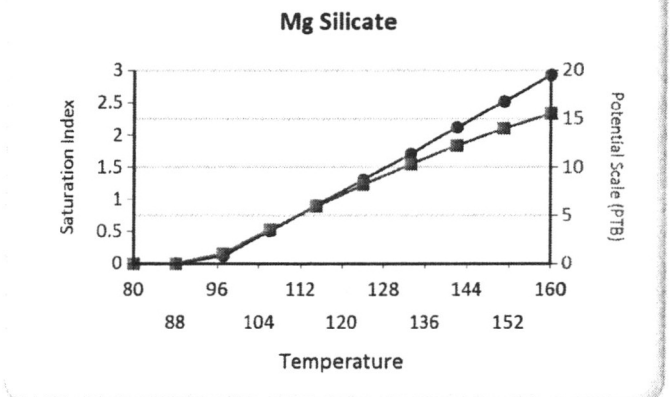
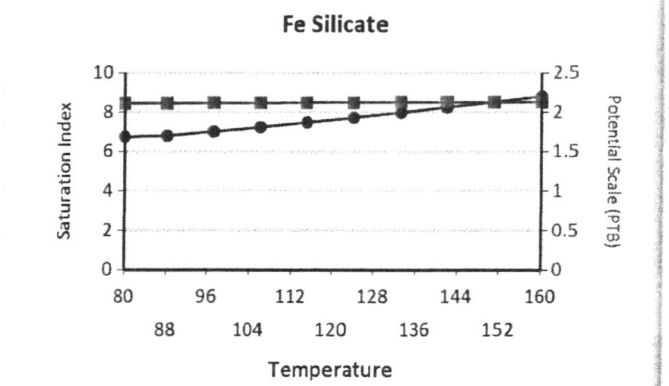
Water Analysis Report









OMB No. 2040-0042 Approval Expires 12/31/2011

EPA

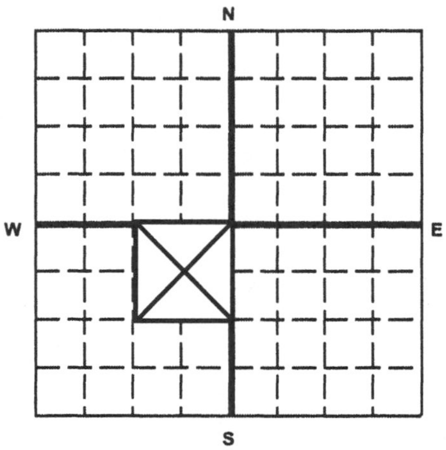
United States Environmental Protection Agency
Washington, DC 20460

ANNUAL DISPOSAL/INJECTION WELL MONITORING REPORT

Name and Address of Existing Permittee
Petroglyph Operating Company, Inc. 2258
P.O. Box 7608
Boise, Idaho 83709

Name and Address of Surface Owner
Ute Indian Tribe
P.O. Box 70
Ft. Duchesne, Utah 84026

Locate Well and Outline Unit on Section Plat - 640 Acres



State: Utah | **County:** Duchesne | **Permit Number:** UT2736-07125

Surface Location Description
1/4 of 1/4 of NE 1/4 of SW 1/4 of Section 29 Township 5S Range 3W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface
Location 2010 ft. frm (N/S) S Line of quarter section
and 1888 ft. from (E/W) W Line of quarter section.

WELL ACTIVITY
- [ ] Brine Disposal
- [x] Enhanced Recovery
- [ ] Hydrocarbon Storage

TYPE OF PERMIT
- [ ] Individual
- [x] Area

Number of Wells 111

Lease Name Ute Indian Tribe   Well Number UTE TRIBAL 29-11

	INJECTION PRESSURE		TOTAL VOLUME INJECTED		TUBING -- CASING ANNULUS PRESSURE (OPTIONAL MONITORING)	
MONTH YEAR	AVERAGE PSIG	MAXIMUM PSIG	BBL	MCF	MINIMUM PSIG	MAXIMUM PSIG
January 13	1460	1484	955		0	0
February 13	1460	1502	792		0	0
March 13	1473	1504	956		0	0
April 13	1456	1509	822		0	0
May 13	1401	1480	807		0	0
June 13	1461	1491	966		0	0
July 13	1443	1466	1032		0	0
August 13	1463	1491	1221		0	0
September 13	1431	1507	969		0	0
October 13	1444	1485	1095		0	0
November 13	1178	1465	674		0	0
December 13	601	1219	233		0	0

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Chad Stevenson, Water Facilities Supervisor	[signature]	2/11/2014

EPA Form 7520-11 (Rev. 12-08)

GREEN BLUE CBI
TAB 2

U2 Entered
Date 3/4/14
Initial JJ

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Units of Measurement: **Standard**

Water Analysis Report

Production Company: **PETROGLYPH ENERGY INC**
Well Name: **UTE TRIBAL 29-11 INJ**
Sample Point: **Wellhead**
Sample Date: **1/8/2014**
Sample ID: **WA-262987**

Sales Rep: **James Patry**
Lab Tech: **Gary Winegar**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics	
Test Date:	1/15/2014
System Temperature 1 (°F):	180
System Pressure 1 (psig):	1300
System Temperature 2 (°F):	60
System Pressure 2 (psig):	15
Calculated Density (g/ml):	1.005
pH:	8.10
Calculated TDS (mg/L):	10871.63
CO2 in Gas (%):	
Dissolved CO_2 (mg/L)):	0.00
H_2S in Gas (%):	
H2S in Water (mg/L):	3.00

Analysis @ Properties in Sample Specifics			
Cations	*mg/L*	*Anions*	*mg/L*
Sodium (Na):	3816.48	Chloride (Cl):	5000.00
Potassium (K):	73.00	Sulfate (SO_4):	168.00
Magnesium (Mg):	22.00	Bicarbonate (HCO_3):	1708.00
Calcium (Ca):	53.00	Carbonate (CO_3):	
Strontium (Sr):	4.60	Acetic Acid (CH_3COO)	
Barium (Ba):	0.89	Propionic Acid (C_2H_5COO)	
Iron (Fe):	1.60	Butanoic Acid (C_3H_7COO)	
Zinc (Zn):	0.26	Isobutyric Acid ($(CH_3)_2CHCOO$)	
Lead (Pb):	0.02	Fluoride (F):	
Ammonia NH_3:		Bromine (Br):	
Manganese (Mn):	0.24	Silica (SiO_2):	23.54

Notes:
B=4.9 Al=.01 Li=.99

(PTB = Pounds per Thousand Barrels)

		Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	1.16	35.59	1.00	0.48	2.74	0.88	1.43	1.12	0.00	0.00	0.00	0.00	0.00	0.00	10.30	0.14
73.00	157.00	1.16	35.21	0.85	0.46	2.59	0.88	1.49	1.13	0.00	0.00	0.00	0.00	0.00	0.00	9.98	0.14
86.00	300.00	1.19	36.05	0.72	0.43	2.49	0.88	1.56	1.13	0.00	0.00	0.00	0.00	0.00	0.00	9.72	0.14
100.00	443.00	1.22	36.94	0.61	0.40	2.40	0.88	1.64	1.14	0.00	0.00	0.00	0.00	0.00	0.00	9.49	0.14
113.00	585.00	1.26	37.86	0.51	0.37	2.34	0.88	1.72	1.14	0.00	0.00	0.00	0.00	0.00	0.00	9.27	0.14
126.00	728.00	1.30	38.79	0.43	0.33	2.30	0.88	1.80	1.15	0.00	0.00	0.00	0.00	0.00	0.00	9.08	0.14
140.00	871.00	1.35	39.70	0.36	0.30	2.27	0.88	1.87	1.15	0.00	0.00	0.00	0.00	0.00	0.00	8.91	0.14
153.00	1014.00	1.40	40.58	0.29	0.26	2.25	0.88	1.95	1.15	0.00	0.00	0.00	0.00	0.00	0.00	8.75	0.14
166.00	1157.00	1.46	41.40	0.24	0.23	2.25	0.88	2.02	1.15	0.00	0.00	0.00	0.00	0.00	0.00	8.61	0.14
180.00	1300.00	1.52	42.15	0.20	0.20	2.26	0.88	2.09	1.15	0.00	0.00	0.00	0.00	0.00	0.00	8.48	0.14

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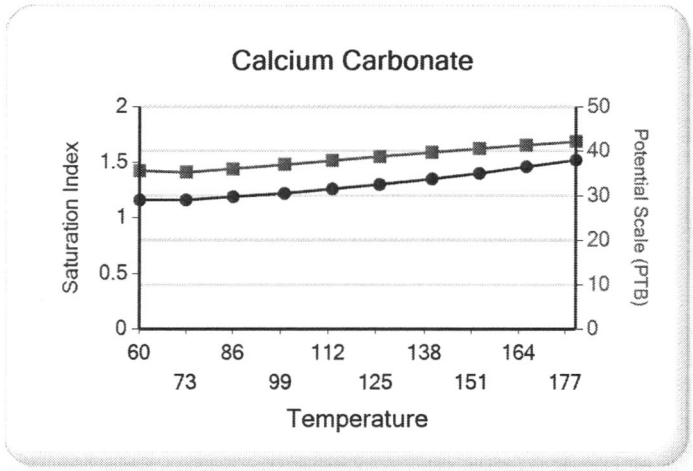
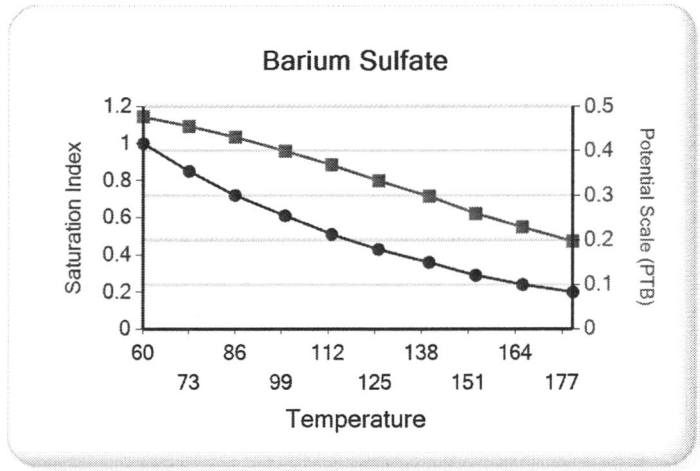
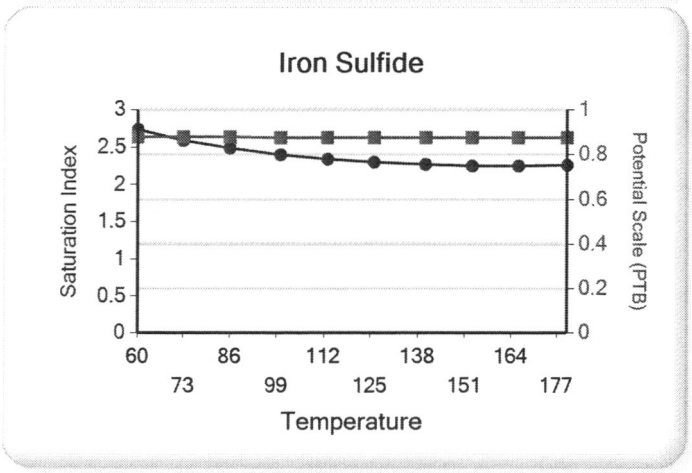
		Hemihydrate CaSO4~0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
Temp (°F)	PSI	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
60.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.73	0.01	0.00	0.00	0.00	0.00	4.34	1.19
73.00	157.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.23	0.01	0.00	0.00	0.00	0.00	4.49	1.20
86.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.04	10.79	0.01	0.00	0.00	0.00	0.00	4.82	1.21
100.00	443.00	0.00	0.00	0.00	0.00	0.00	0.00	0.29	0.08	10.40	0.01	0.24	1.47	0.00	0.00	5.19	1.22
113.00	585.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.12	10.04	0.01	0.87	4.88	0.04	0.42	5.59	1.22
126.00	728.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.13	9.71	0.01	1.50	8.37	0.39	2.50	6.00	1.23
140.00	871.00	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.15	9.41	0.01	2.14	11.92	0.75	4.58	6.43	1.23
153.00	1014.00	0.00	0.00	0.00	0.00	0.00	0.00	0.95	0.15	9.13	0.01	2.78	15.44	1.11	6.60	6.87	1.24
166.00	1157.00	0.00	0.00	0.00	0.00	0.00	0.00	1.09	0.16	8.88	0.01	3.41	18.77	1.48	8.49	7.32	1.24
180.00	1300.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	0.16	8.65	0.01	4.05	21.75	1.85	10.15	7.78	1.24

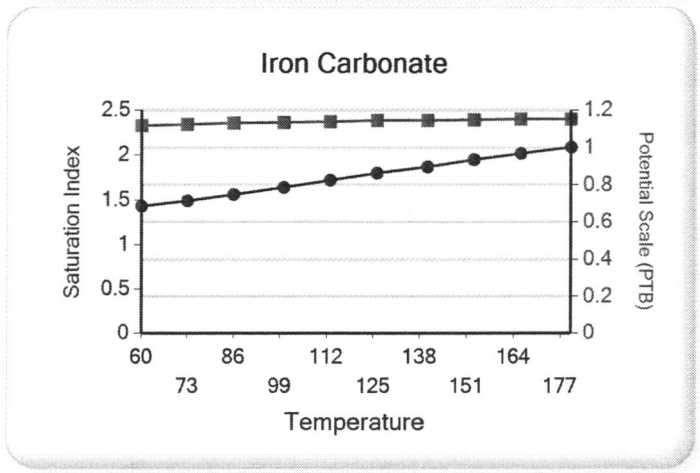
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Lead Sulfide Fe Silicate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Sulfide Iron Carbonate Zinc Sulfide Zinc Carbonate Lead Sulfide Mg Silicate Ca Mg Silicate Fe Silicate









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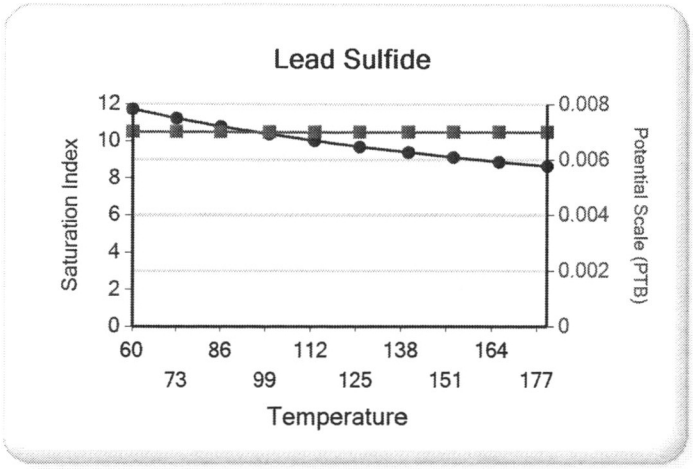

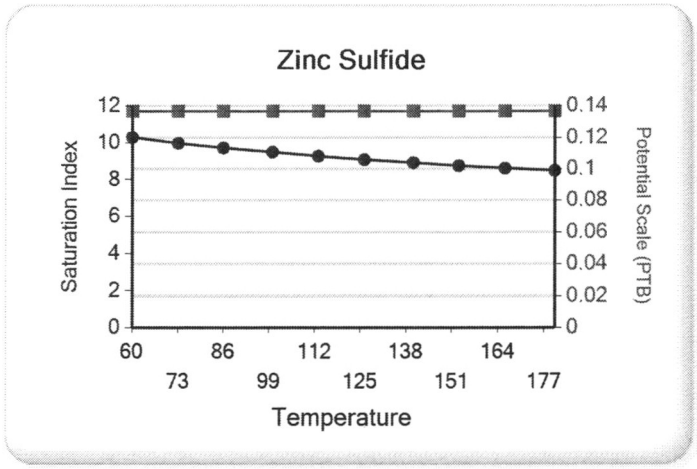

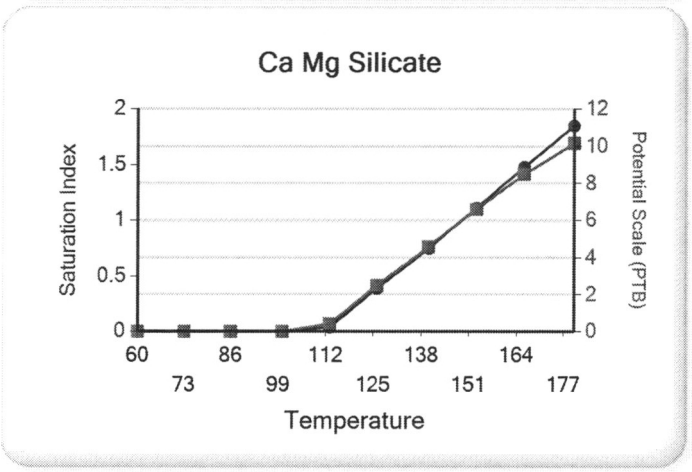

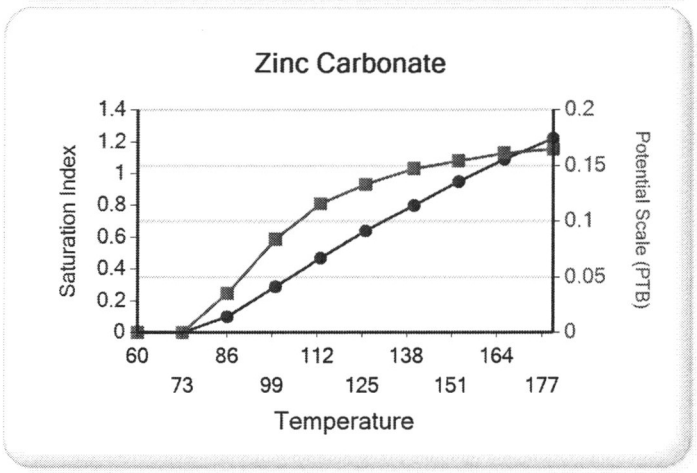

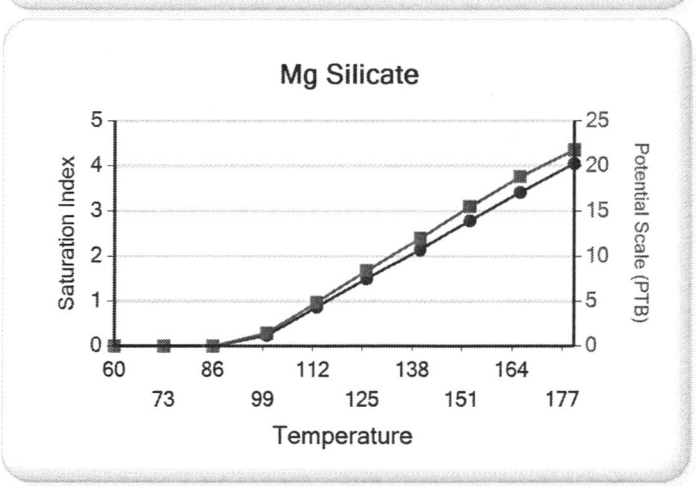

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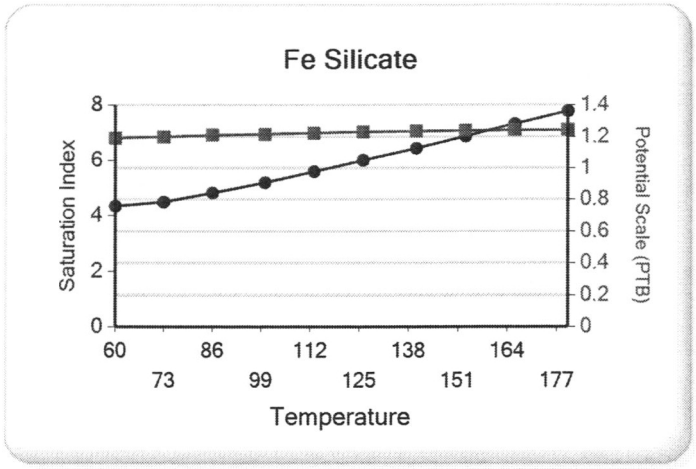

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

AUTHORIZATION FOR ADDITIONAL WELL

UIC Area Permit No: UT20736-00000

The Antelope Creek Waterflood Final UIC Area Permit No. UT20736-00000, effective July 12, 1994, authorizes injection for the purpose of enhanced oil recovery into multiple lenticular sand units which are distributed throughout the lower portion of the Green River Formation. On January 27, 2006, the permittee provided notice to the Director concerning the following additional enhanced recovery injection well:

Well Name:	**Ute Tribal 29-11**
EPA Well ID Number:	**UT20736-07125**
Location:	2010 ft FSL & 1880 ft FWL Sec. 29- T5S - R3W Duchesne County, Utah

Pursuant to 40 CFR §144.33, Area UIC Permit No. UT20736-00000 authorizes the permittee to construct and operate, convert, or plug and abandon additional enhanced recovery injection wells within the area permit. This well was determined to satisfy additional well criteria required by the permit.

This well is subject to all provisions of UIC Area Permit No. UT20736-00000, as modified and as specified in the Well Specific Requirements detailed below. This Authorization shall expire one year after the Effective Date unless the permittee has converted the well to injection or submits a written request to extend this Authorization prior to the expiration date.

This Authorization is effective upon signature.

Date: MAR 22 2007

for **Stephen S. Tuber**
*Assistant Regional Administrator
Office of Partnerships and Regulatory Assistance

** The person holding this title is referred to as the Director throughout the permit and Authorization*

WELL-SPECIFIC REQUIREMENTS

Well Name: **Ute Tribal 29-11**
EPA Well ID Number: **UT20736-07125**

Prior to commencing injection operations, the permittee shall submit the following information and receive written Authority to Inject from the Director:

1. a successful Part I (Internal) Mechanical Integrity Test (MIT);
2. pore pressure calculation of the proposed injection zone; and
3. completed Well Rework Record EPA Form No. 7520-12 and schematic diagram.

Approved Injection Zone: Injection is approved between the base of the Green River A Lime Marker, at approximately 3900 ft $(KB)_{CBL}$, to the top of the Basal Carbonate, at approximately 5900 ft $(KB)_{CBL}$.

Maximum Allowable Injection Pressure (MAIP): The initial MAIP is **1540 psig,** based on the following calculation:

MAIP = [FG - (0.433)(SG)] * D, where
FG = 0.80 psi/ft SG = 1.009 D = 4246 ft (top perforation depth KB)
MAIP = 1540 psig

UIC Area Permit No. UT20736-00000 also provides the opportunity for the permittee to request a change of the MAIP based upon results of a step rate test that demonstrates the formation breakdown pressure will not be exceeded.

Well Construction and Corrective Action: ***No Corrective Action is required.***
Based on the review of well construction and cementing records, including CBL, well construction is considered adequate to prevent fluid movement out of the injection zone and into USDWs.

Tubing and Packer: ***No Corrective Action is required.***
The 2-3/8" or similar size injection tubing is approved. The packer shall be set at a depth no more than 100 ft above the top perforation.

Corrective Action for Wells in Area of Review: ***No Corrective Action is required.***
The following wells that penetrate the confining zone are within or proximate to a 1/4 mile radius around the Ute Tribal No. 29-11 were evaluated to determine if any corrective action is necessary to prevent fluid movement into USDWs:

Well:	Ute Tribal No. 29-06	Location: SENW	Sec. 29 - T5S - R3W
Well:	Ute Tribal No. 29-06F	Location: SENW	Sec. 29 - T5S - R3W
Well:	Ute Tribal No. 29-10	Location: NWSE	Sec. 29 - T5S - R3W
Well:	Ute Tribal No. 29-12	Location: NWSW	Sec. 29 - T5S - R3W
Well:	Ute Tribal No. 29-14	Location: SESW	Sec. 29 - T5S - R3W

PLUG NO. 6: Set a cement plug inside of the 5-1/2" casing, from at least 260 ft (KB) to 310 ft (KB).

PLUG NO. 7: Set a cement plug on the backside of the 5-1/2" casing, from surface to a depth of at least 50 ft.

PLUG NO. 8: Set a cement plug inside of the 5-1/2" casing from surface to a depth of at least 50 ft.

Cut off surface and 5-1/2" casing at least 4 ft below ground level and set P&A marker; submit Sundry Notices and all necessary data as required by the EPA and other regulatory agencies.

Reporting of Noncompliance:

(a) Anticipated Noncompliance. The operator shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(b) Compliance Schedules. Reports of compliance or noncompliance with, or any progress on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than thirty (30) days following each schedule date.

(c) Written Notice of any noncompliance which may endanger health or the environment shall be reported to the Director within five (5) days of the time the operator becomes aware of the noncompliance. The written notice shall contain a description of the noncompliance and its cause; the period of noncompliance including dates and times; if the noncompliance has not been corrected the anticipated time it is expected to continue; and steps taken or planned to prevent or reduce recurrence of the noncompliance.

Twenty-Four Hour Noncompliance Reporting:

The operator shall report to the Director any noncompliance which may endanger health or environment. Information shall be provided, either orally or by leaving a message, within twenty-four (24) hours from the time the operator becomes aware of the circumstances by telephoning 1.800.227.8917 and asking for the EPA Region 8 UIC Program Compliance and Enforcement Director, or by contacting the Region 8 Emergency Operations Center at 303.293.1788 if calling from outside EPA Region 8. The following information shall be included in the verbal report:

(a) Any monitoring or other information which indicates that any contaminant may cause an endangerment to a USDW.

(b) Any noncompliance with a Permit condition or malfunction of the injection system which may cause fluid migration into or between underground sources of drinking water.

Demonstration of Mechanical Integrity: A successful demonstration of Part I (Internal) Mechanical Integrity using a standard Casing-Tubing pressure test is required prior to injection and at least once every five years thereafter. EPA reviewed the cement bond log and determined the cement will provide an effective barrier to significant upward movement of fluids through vertical channels adjacent to the well bore pursuant to 40 CFR 146.8 (a)(2). Therefore, further demonstration of Part II (External) Mechanical Integrity is not required at this time.

Demonstration of Financial Responsibility: The applicant has demonstrated financial responsibility in the amount of $15,000 via a Surety Bond that has been reviewed and approved by the EPA.

Plugging and Abandonment: The well shall be plugged in a manner that isolates the injection zone and prevents movement of fluids into or between USDWs. Tubing, packers, and any downhole apparatus shall be removed. Class A, C, G, and H cements, with additives such as accelerators and retarders that control or enhance cement properties, may be used for plugs; however, volume extending additives and gel cements are not approved for plug use. Plug placement shall be verified by tagging. Plugging gel of at least 9.2 lb/gal shall be placed between all plugs. A minimum 50 ft surface plug shall be set inside and outside of the surface casing to seal pathways for fluid migration into the subsurface. Within sixty (60) days after plugging the owner or operator shall submit Plugging Record (EPA Form 7520-13) to the Director. The Plugging Record must be certified as accurate and complete by the person responsible for the plugging operation. At a minimum, the following plugs are required:

PLUG NO. 1: Set a cast iron bridge plug (CIBP) no more than 50 ft above the top perforation (located at 4246 ft (KB)) with a minimum 20 ft cement plug on top of the CIBP.

PLUG NO. 2: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the Trona Zone and the Mahogany Shale, between approximately 2668 ft (KB) to 2868 ft (KB).

PLUG NO. 3: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the top of the Green River, between approximately 1460 ft (KB) to 1660 ft (KB). This plug fulfills the Utah BLM P&A requirement.

PLUG NO. 4: Set a minimum 200 ft cement plug inside of the 5-1/2" casing and on the backside of the 5-1/2" casing across the base of the USDW, between approximately 1106 ft (KB) to 1306 ft (KB). This plug fulfills the Utah BLM P&A requirement.

PLUG NO. 5: Set a minimum 50 ft cement plug on the backside of the 5-1/2" casing, across the surface casing shoe at 285 ft (KB) (unless pre-existing backside cement precludes cement-squeezing this interval.)

Oil Spill and Chemical Release Reporting:
The operator shall comply with all other reporting requirements related to oil spills and chemical releases or other potential impacts to human health or the environment by contacting the **National Response Center (NRC) 1.800.424.8802 or 202.267.2675,** or through the **NRC website at http://www.nrc.uscg.mil/index.htm.**

Other Noncompliance:
The operator shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted.

Other Information:
Where the operator becomes aware that he failed to submit any relevant facts in the Permit application, or submitted incorrect information in a Permit application, or in any report to the Director, the operator shall submit such correct facts or information within two (2) weeks of the time such information became known to him.

WELL-SPECIFIC CONSIDERATIONS

Well Name: **Ute Tribal 29-11**
EPA Well ID: **UT20736-007125**

Underground Sources of Drinking Water (USDWs): USDWs in the Antelope Creek Waterflood area generally may occur within the Uinta Formation, which extends from the surface to the top of the Green River Formation at approximately 1560 ft (KB). According to *"Base of Moderately Saline Ground Water in the Uinta Basin, Utah, State of Utah Technical Publication No. 92,"* the base of moderately saline ground water may be found at approximately 424 ft below ground surface at this well location. Based on information reported by Petroglyph in the cement bond log (CBL) submitted, the base of a USDW was found at 1206 ft (KB) in the Ute Tribal 29-11. Based on analysis of the submitted CBL the top of casing cement in this well is at approximately 3558 ft (KB).

Confining Zone: The Confining Zone at this location is approximately 202 ft of interbedded limestone and shale between the depths of 3698 ft to 3900 ft (KB) which directly overlies the Injection Zone, based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log. Additional impermeable lacustrine shale beds above the Confining Zone provide for further protection for any overlying USDW.

Injection Zone: The Injection Zone at this well location is an approximately 2000 ft section of multiple lenticular sand units interbedded with shale, marlstone and limestone from the base of the Confining Zone at 3900 ft (KB) to the top of the Basal Carbonate Formation at 5900 ft (KB), based on correlation to the Antelope Creek Ute Tribal 04-03 well Type Log.

Well Construction: The CBL shows that there is more than 202 ft of 80% or greater bond across the confining zone, at approximately 3698 ft (KB) to 3900 ft (KB)

Surface Casing: 8-5/8" casing is set at 270 ft (KB) in a 12-1/4" hole, using 165 sacks cement circulated to the surface

Longstring Casing: 5-1/2" casing is set at 5992 ft (KB) in a 7-7/8" 6035 ft (KB) total depth hole with plugged back total depth (PBTD) of 5945 ft (KB), cemented with 485 sacks cement

Top of Cement : 3558 ft $(KB)_{CBL}$

Perforations: Top: **4246 ft** (KB) Bottom : **5510 ft** (KB)

Wells in Area of Review (AOR): Construction and cementing records, including cement bond logs (CBL) as available, for two wells in the 1/4 mile AOR that penetrated the confining zone were reviewed and found adequate to prevent fluid movement out of the injection zone and into USDWs.

Well: Ute Tribal No. 29-06	Casing Cement top: 3450 ft $(KB)_{CBL}$
Well: Ute Tribal No. 29-06F	Casing Cement top: 1460 ft $(KB)_{CBL}$
Well: Ute Tribal No. 29-10	Casing Cement top: 1280 ft $(KB)_{CBL}$
Well: Ute Tribal No. 29-12	Casing Cement top: 2250 ft $(KB)_{CBL}$
Well: Ute Tribal No. 29-14	Casing Cement top: 560 ft $(KB)_{CBL}$